

REMARKS

In this Response, Applicants amend claim 14 and remove the bases for the Examiner's rejections. Amendments to the claims are being made solely to expedite prosecution of the present application and do not constitute an acquiescence to any of the Examiner's rejections. New claim 28 has been added to cover a preferred embodiment of the present process. Support for the amendments and new claim can be found throughout the application and in the original claims. Upon entry of the Amendment, claims 14-17 and 24-28 are pending in the present application, with claims 18-23 currently withdrawn.

Election/Restriction

In the Office Action, the Examiner withdrew claims 18-23 from further consideration. Applicants thus annotate claims 18-23 with the status identifier "withdrawn."

Upon allowance of independent claim 14, Applicants will request reconsideration and allowance of withdrawn claims 18-23 as they depend directly or indirectly from independent claim 14.

Claim Rejections

35 U.S.C. § 102(b)

Claims 14, 15, and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by Moriceau.

Applicants' independent claim 14 is directed to a method for treating microelectronic or optoelectronic substrates that have a working layer with a free surface. Among other things, Applicants' independent claim 14 includes annealing the substrate under a reductive atmosphere to assist in smoothing of the free surface and, then, chemical mechanical polishing the free surface to prepare it for further processing.

Moriceau describes two techniques for fabricating SOI surfaces, namely, hydrogen annealing and chemical mechanical polishing. Moriceau does not teach or suggest combining hydrogen annealing with chemical mechanical polishing. Rather, Moriceau teaches at most that hydrogen annealing is "[a]n alternative" to chemical mechanical polishing. (Moriceau, ll. 13-17.) Moriceau does not, therefore, teach or suggest Applicants' claimed combination of annealing under a reductive atmosphere and chemical mechanical polishing. Since Moriceau does not teach or suggest Applicants' claimed combination,

Moriceau cannot and does not teach or suggest Applicants' claimed order of that combination, i.e., annealing under a reductive atmosphere and then chemical polishing.

Independent claim 14 and dependent claims 15 and 27 are, therefore, allowable over Moriceau.

35 U.S.C. § 103(a)

Claims 14 and 24-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Okonogi in view of Moriceau and Ghandi. Also, claims 16 and 17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Moriceau in view of Aga.

Claims 14 and 24-26

A prima facie case of obviousness requires a motivation to combine, a reasonable expectation of success, and a teaching or suggestion of all claimed features. The present rejection has not satisfied any of these elements.

The combination of Okonogi, Ghandi, and Moriceau is not proper because there is neither a motivation to combine their teachings nor a reasonable expectation of success of such a combination. As previously described, Moriceau teaches hydrogen annealing only as "[a]n alternative" to chemical mechanical polishing. At most, therefore, Moriceau suggests substituting hydrogen annealing for chemical polishing, but not combining hydrogen annealing with chemical polishing. Since Okonogi and Ghandi do not even mention hydrogen annealing, there is no motivation to combine these references. As known by those of ordinary skill in the art, hydrogen annealing and chemical mechanical polishing are distinct, non-equivalent techniques for reducing surface roughness. Indeed, as described on pps. 1-2 of Applicants' specification, hydrogen annealing and chemical mechanical polishing have different advantages and disadvantages. Since hydrogen annealing and chemical mechanical polishing have different advantages and disadvantages, and since none of the cited references provides any teaching that a combination of such annealing and polishing would, nonetheless, result in an overall reduction in surface roughness, there is no reasonable expectation of success.

Even if the combination of Moriceau, Okonogi, and Ghandi were proper, the combination still does not teach or suggest all of the features of Applicants' independent claim 14. As previously described herein, independent claim 14 includes annealing under a reductive atmosphere and then chemical mechanical polishing. None of the references teaches or suggests any order for a combination of annealing and chemical mechanical

polishing, let alone Applicants' claimed order of annealing and then chemical mechanical polishing.

Independent claim 14 and dependent claims 24-26 are, therefore, allowable over Okonogi, Ghandi, and Moriceau.

Claims 16 and 17

As previously provided herein, independent claim 14 is allowable. Since independent claim 14 is allowable, dependent claims 16 and 17 are also allowable, thereby mooted the Examiner's rejections of dependent claims 16 and 17.

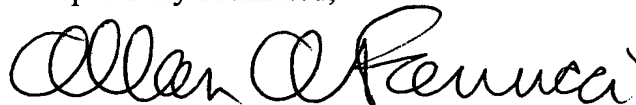
CONCLUSION

On the basis of the foregoing Amendment and Remarks, this application is in condition for allowance. Should the Examiner not agree that all pending claims are allowable, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of these claims.

Date: _____

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Respectfully submitted,



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